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THE ROLE OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN PRECISION TARGETING: REVOLUTIONIZING MARKETING STRATEGIES

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Abstract

Digital marketing has undergone rapid evolution in recent years. The development of machine learning and artificial intelligence (AI) is one of the major shifts affecting the marketing environment (ML). This technology has completely changed how businesses engage with their clientele and maximize their advertising budgets. Artificial intelligence refers to the ability of a computer or system to imitate human intelligence. In the context of digital marketing, AI can be used to quickly and efficiently analyze data, identify patterns and provide valuable insights. With artificial intelligence, companies can make smarter decisions and optimize their marketing campaigns based on deeply analyzed data. The method used in this article is the study method. Literature studies can be obtained from various sources, including journals, books, documentation, the internet and libraries. This research discusses the definition of AI and ML, the transformation of the marketing sector by digital platforms and data analytics, the exploration of precision marketing and its increasing relevance in the digital era, the role of AI and ML in data mining for precision targeting, the contribution of AI in creating more granular customer segments, and the study of ML in predictive analytics to anticipate customer behavior.

Keywords: Artificial intelligence, machine learning, precision, marketing strategy.

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INTRODUCTION

In the current era of globalization, namely the era of Industrial Revolution 4.0, the use of the internet is precisely to integrate the complexity of using technology and information in all production lines in the industrial world. To gain competitive advantage, business organizations must continue to focus on identifying strategic product differentiation, building or reshaping core competitiveness, producing technological uniqueness, and generating innovation to generate intellectual property (Campbell et al, 2020). These efforts are designed to enable business organizations to succeed in highly competitive markets. Business organizations must not only be able to sell their products or services, but also must have more value than their competitors. The ever-changing business environment requires companies to be more market-oriented. Market-oriented business organizations will treat customers as king.

Business organizations that understand consumer needs and can satisfy consumers will win the competition. The fiercer the competition in an industry, the more important a company's market-oriented capabilities become. Technological competition and intelligent competition between human resources currently demands increased company competitiveness. Increasingly mature technology makes it easier for companies to reach markets and consumers with the help of internet digital marketing media based on social media applications. who uses it.

In the era of globalization with increasingly fierce competition in the retail sector, traditional markets not only face competition from Hypermarkets, Department Stores and Supermarkets, but also face unfavorable government regulations. in the market. A customer-oriented strategy is a strategic tip for traditional market traders in facing conducive market opportunities and increasingly fierce competition. A customer-oriented strategy will be effective in producing sustainable competitive advantages because it creates a strategic position for the company. Until now, there are still many traditional market traders who are not aware of the need for strategies to increase customer loyalty. Strategies for acquiring, maintaining and retaining customers greatly determine customer loyalty. Lack of understanding of this strategy results in traditional market traders spending a lot of money to acquire customers which only reduces profits and serves less customers who contribute to profits (Libai et al, 2020).

Customers want tailored experiences that cater to their own requirements and tastes in today's digital world. For marketers to remain relevant and provide results, we need to meet these expectations. The rapid

progress of machine learning (ML) and artificial intelligence (AI) technology is one of the biggest game changers in this industry. These innovative solutions are revolutionizing digital marketing by allowing companies to provide more individualized customer experiences than ever before. Consumers in the era of information overload are inundated with messages and adverts on a daily basis. Marketers need to offer relevant and personalized experiences in order to stand out from the competition and engage with customers in a meaningful way. The secret to consumer engagement, loyalty, and conversion is now personalization. Marketers may cultivate more meaningful relationships with their audiences by tailoring content, offers, and interactions according to individual interests and behavior, thereby making them feel understood and appreciated (Van Esch & Stewart Balck, 2021).

Intense competition and technological issues have changed the way businesses operate in today's environment. A global customer-centric approach focusing on customer needs plays an important role in the growth of the organization. Artificial intelligence is a widely used new technology that allows businesses to track data in real-time while analyzing and responding quickly to customer needs. AI provides organizations with critical insights into consumer behavior that are highly beneficial for customer attraction and retention. Further activities are driven by AI, which is changing the entire consumer experience. Therefore, AI is a useful tool for determining customer expectations and for charting future directions (Wisetsri et al., 2021).

Artificial intelligence is being employed extensively in a variety of fields outside of marketing, including the legal, medical, educational, e-commerce, and manufacturing industries. The application of AI can be advantageous for numerous sectors. Innovations in technology, artificial intelligence, and other fields are emerging concurrently with enterprises' progress toward Industry 4.0. However, not all industries can currently apply AI in practice. This is because scientists working on systems that support the theory of mind and self-awareness of artificial intelligence systems are subject to numerous limitations. Artificial intelligence (AI) is used in marketing to examine consumer purchasing patterns, preferences, and routines. AI turns conventional retail establishments into intelligent retail spaces. Smart retail establishments offer a better supply chain, enhance consumer satisfaction, and make shopping easier (Wisetsri et al., 2021).

AI is becoming more significant in marketing from a strategic standpoint. The creation of artificial agents to assist in remembering data about customers, rivals, and company priorities, as well as to make suggestions and/or

execute marketing actions to maximize marketing outcomes, is known as marketing artificial intelligence (Huang and Rust, 2022). Businesses that are expanding by enhancing their performance through the use of AI and ML-based platforms include Google, Rare Carat, Spotify, and Under Armour.AI and ML are revolutionizing marketing research, strategy, and execution, as well as customer connections and experiences. They are also becoming more and more significant in the field. Applications of AI and ML are spreading over a wide range of sectors and businesses as their diversity and prevalence increase. The use of AI and ML in marketing is similar. Applications of AI and ML powered by data personalize and customize goods, services, and elements of the marketing mix. The entire customer journey and customer engagement service procedures will maximize the experience's worth. Huang and Rust (2021) developed a three-stage framework and three levels of AI intelligence, namely AI mechanics, AI thinking, and AI feeling, based on marketing research strategic planning, marketing strategy-action cycle, in order to identify and systematize the opportunities for applying AI and ML in marketing.

RESEARCH METHOD

The research method that will be used in this research will involve studying existing literature and using theories/opinions according to experts. A literature study will be conducted to gather information about concepts, theories and methods related to artificial intelligence and sentiment analysis. By identifying previous research, the approaches used, and the findings found, a deep understanding of the aspects related to the application of artificial intelligence in sentiment analysis will be obtained. The analysis method using the literature study method involves the systematic collection and evaluation of literature relevant to the research topic. First, researchers identify and collect relevant literature sources, such as scientific journals, books and related research reports. Then, they conducted an in-depth review of the literature, analyzing content, methodology, and existing findings. The analysis process involves grouping, synthesizing, and interpreting the information found in the literature. The literature study method provides an in-depth understanding of the research topic, allows identification of trends, weaknesses and gaps in existing knowledge, and provides a strong theoretical foundation for further research.

RESULT AND DISCUSSION

Definition of Artificial Intelligence (AI) and Machine Learning (ML)

Artificial intelligence (AI) is defined as the science and engineering involved in the manufacture of intelligent machines, especially intelligent machinery designed to mimic human cognitive abilities (Russell & Norvig, 2010). According to other experts, Artificial Intelligence (IA) can also be understood as scientific and computer engineering research that focuses on the creation of smart machines, which are computer programs that can perform tasks that normally require human intelligence. (Russel et al., 2010). Artificial Intelligence (AI) in the marketing concept includes the use of various techniques such as Machine Learning (ML), Natural Language Processing (NLP), and Computer Vision to analyze data, optimize consumer experiences, predict consumer behaviour, and improve the efficiency and effectiveness of marketing strategies (Li et al., 2021). A study conducted by Wirth (2018) argues that AI, at its current stage of development, is capable of replacing or supplementing the expertise needed to make informed marketing decisions (Chintalapati & Pandey, 2022).

The creation of computer systems that are capable of doing activities that often require human intelligence, such as speech recognition, decision-making, visual perception, and language translation, is referred to as artificial intelligence. The ability of computers to learn from experience and flourish without explicit programming is the focus of machine learning, a subset of artificial intelligence. Put differently, machine learning algorithms enable computers to recognize patterns in the data they process, anticipate future events, and modify their behavior accordingly. The development of AI and machine learning has been characterized by notable advancements in computational power, algorithmic efficiency, and data processing capabilities. Because early AI systems depended on rules-based programming, programmers had to explicitly specify the steps computers should take to accomplish a given task. Nevertheless, this system's capacity to handle challenging real-world issues is constrained.

Machine learning has made it possible for computers to learn from massive volumes of data and enhance their performance by seeing patterns. It makes it possible to create increasingly complex AI applications, like recommendation systems, natural language processing, and picture and voice recognition. Advances in AI and machine learning are being accelerated by the growth of big data, cloud computing, and deep learning techniques. This

presents new potential for marketers to use these technologies in their personalization campaigns.

Natural language generation (NLG), one of the AI-driven content generation technologies, enables marketers to create personalized and interesting content on a massive scale. These technologies use consumer data analysis to provide calls to action, top news stories, and communications that are customized for particular target audiences (Nayarisseri et al., 2021). AI, for instance, can simulate the manner in which a dealer in a physical store assists customers, enhancing the intelligence and interconnectivity of online consumer searches. Furthermore, real-time personalization has changed from being a broad character to a customized experience powered by massive volumes of data and technology. With the aid of artificial intelligence (AI) and natural language processing, chatbots offer individualized customer care and support, streamlining customer support operations and delivering a tailored experience. An international bank has reduced waiting times, raised customer happiness, and cut operational expenses dramatically by deploying an AI chatbot to answer consumer inquiries. Real-time pricing strategy adjustments are made by AI-driven dynamic pricing algorithms, which examine competitor data, market trends, and consumer behavior. Offering prices, rebates, and customized promotions that encourage conversions are made possible by it.

Evolution of the Marketing Landscape

Nowadays a lot of people are using digital marketing methods to promote their business. In addition, nowadays, many users are making purchases through digital platforms because they are considered more effective and efficient. As part of the digital transformation, the best way for to increase the value of their products is to create a digital platform (Arifin et al., 2020). In this case, have the opportunity to use information technology to develop their business. E-commerce and social media are two types of digital platforms that businesspeople often use to market products digitally. Ecommerce is the activity of selling, buying and marketing goods or services through the Internet network. Ecommerce provides a number of advantages for, including the ability to improve sales, communication, corporate image, employee productivity, expand market opportunities as well as streamlining processes and (Rahayu & Day, 2017).

Ecommerce has many advantages, one of which is operational benefits such as broad reach, lower costs, better supply chains and more business opportunities. In addition to e-commerce, social media is also a popular

promotion tool used. Social media is digital information created by users of publication technology, which is not difficult to access so it is expected to facilitate communication, influence, and interaction between each other and the general public (Rafiah & Kirana, 2019). Social media product marketing is a popular strategy employed by entrepreneurs across a range of industries to expand their businesses. Social media's static and dynamic qualities make it simple to market a range of goods and events. Online social media product marketing is becoming more and more popular among different company actors because of its low cost, ease of use, and large market potential. Consequently, company owners and other organizations are able to advertise their products through social media marketing communications.

Consumer attitudes to marketing have also changed with the digital revolution. Seeing from the way consumers look for, pay, consume and discard goods purchased after they are consumed indicates a change in consumer behavior. In addition to these factors, the price and availability of various types of products offered on the online site also greatly influence consumer behavior in online shopping. David Rogers, a professor at Columbia Business School, says five factors that characterize consumer behavior in the digital marketing era: access is that customers in the Digital Age often get information and interact easily and can be tailored to their needs, engage is that the digital age customers want to talk to the seller of the product or distributor they buy, customize is that consumers in the digitale age always expect when marketers and sellers only offer products that match their preferences, connect is that in this digital era customers always want to know what other customers think and want so that they can share their thoughts, and the last is collaborate is that clients who understand digital have strong habits and ability to work with other customers in order to goals that benefit them (Mishra & Triptahi, 2019).

AI and ML in Precision Marketing

In precision marketing, the principle is the same as using the right technology foundation and data analysis capabilities, and by taking a dedicated approach to designing and executing marketing campaigns, companies no matter how big they are or how far away from the end customer can attract new sources of energy. Its strength is the ability to deliver accurate and accurate marketing messages to people at the level of a narrow customer segment. Precision marketing for marketing is like mass customization or mass ordering is for manufacturing activities. While mass customisation gives companies the ability to offer people products that are made specifically,

precision marketing gives the ability for companies to attract people with marketing messages that are created specifically (Sharma et al, 2023).

Precision marketing is about turning non-customers into customers and turning existing customers into better customers. The term precision marketing has just entered the business jargon lately. Nevertheless, many of the underlying concepts have a long history (Rathore, 2019). Understand about customer intimacy, for example, describing how business was done from the past to the present. Sellers and buyers talk to each other face-to-face, and they've known each other for a long time. For a seller, suggesting a product to a buyer, based on his knowledge of the buyer's wishes and needs, was precise marketing in its former form.

There are three reasons why we are so convinced that precision marketing can take place on a small scale and not complicated and can happen on a large and extremely complicated scale. First, enabling technology and analytical capabilities are adapting and developing very rapidly, thus being able to simplify execution processes while optimizing business outcomes. Secondly, competitive pressures in the markets continue to increase and will continue to do so, both in good and in bad economic conditions. Third, the vast and enormous real benefits associated with precision marketing continue to gain recognition from an increasing number of companies, in various sectors of industry. Within a large and very complicated business system, this understanding can be explained from the basic concept that we now call market segmentation. Market segmentation, according to the forgotten economist Wendel Smith, is the process of adjusting a product or marketing campaign to match user or consumer demand as precisely as possible. Smith first proposed the idea almost fifty years ago. Smith says that in response to a range of product preferences across significant market groups, heterogeneous markets should be viewed as a smaller set of homogenous markets (Rathore, 2020).

Precision Marketing Principles

These days, marketers are inundated with audience data. Consumer attraction can be inferred from linked devices such as tablets, smartphones, and desktop computers. These pointers can assist in providing answers to inquiries regarding the values and lifestyle of the target audience. But without data insight can be tracked, it is meaningless (Alassafi et al, 2023).

Thankfully, cloud marketing and the development of data management solutions have given marketers the means to effectively handle and utilize vast

volumes of data. They are more adept at cutting through the clutter, spotting important trends, and developing a comprehensive picture of who their potential clients are. Any successful marketing campaign must start with accurate audience data, which serve as the foundation for interesting and relevant content. Marketers can create a cohesive and relevant experience for their customers throughout the consumer journey by understanding what drives their customers' purchasing decisions and what matters to them most.

Data-driven marketing is known as precision marketing. Targeting current clients with precision marketing helps to promote brand loyalty and influence consumer behavior. A company can maximize its marketing expenditures, cut expenses, and boost income with this kind of marketing. Precision marketing places more of an emphasis on bids and strategies that draw in current clients than it does on creating compelling advertisements. Precision marketing uses market segmentation, a method for dividing the market into smaller, more focused consumer segments with distinct needs, extensively to achieve this (Huang & Rust, 2021).

Data collection about consumer behavior is necessary for market segmentation. For instance, supermarket businesses provide their patrons with discount cards that not only save money but also track everything they purchase and keep an eye on their demographic information. When a consumer registers for an account on an online retailer, they are asked for personal preferences, age, gender, and geography. To better understand their customers and their needs, the marketing division analyzes and stores all of this data in a large database (Huang, 2022).

The business used this information to develop a loyalty program that offers free stuff, preferential treatment, and access to only-available products in an effort to draw in current clients. Any offer's basic goal is to give clients the impression that their demands are understood and their business is respected. Customer loyalty is high when a business delivers a memorable customer experience on a regular basis.

Comprehensive precision marketing tactics are usually most appealing to large organizations with broad product ranges. Businesses in the travel, hotel, and retail sectors are expanding quickly, and there can be intense competition amongst them. They spend a lot of money collecting, evaluating, and leveraging consumer data to present offers to their current clientele.

Precision marketing is, as its name implies, heavily concentrated on focus and accuracy. Implementing a precise marketing strategy that yields results requires adhering to a meticulous and all-encompassing plan. Businesses

have amassed a vast amount of client data through online efforts. Best Western made the decision to employ a direct mail marketing strategy to stay in touch with their frequent consumers after reviewing this data. To create a customer benefit statement that looks like a credit card bill or frequent flyer report, they teamed up with a business called InfoPrint. The goal is to simplify for clients what advantages they have received and what is required to receive additional benefits (Libai et al, 2020).

Data Mining Process

Data mining is a collective name used to describe a number of methods to study and analyze data in large quantities to identify patterns and rules in it. Data mining is considered to be a discipline of its own in data science. If we talk about the widespread use of knowledge and developments in this field, companies most often use data mining to extract useful information from data. By using software solutions to find patterns in large amounts of data, companies can learn consumer behaviour and habits to develop more effective marketing solutions, increase sales, and reduce costs. (Jobanputra et al, 2023). In addition, data mining techniques are used to build machine learning (ML) models, which are used in modern artificial intelligence applications such as search engine algorithms and recommendation systems.

In an increasingly competitive marketing world, artificial intelligence has become a key factor in achieving success. AI technology has brought significant changes in the way companies interact with consumers and influence their purchasing decisions. In this article, we will explore the role of AI in marketing and how this technology helps companies reach consumers more intelligently and effectively (Li & Yang, 2021).

The speed and accuracy of AI data analysis is one of its main advantages in marketing. Social media, websites, and consumer transactions are just a few of the sources of data that artificial intelligence (AI) can gather, combine, and evaluate. Through gaining insight into the demands, interests, and patterns of consumer behavior, businesses can optimize their marketing strategy. Businesses can use AI to give customers personalized and relevant experiences. Artificial intelligence (AI) can comprehend unique customer preferences and create content that is catered to their requirements and interests by using data analysis and natural language processing. Content personalization can include specific product recommendations, special offers, or customized messages, all of which can enhance consumer engagement and drive conversions. AI plays a key role in targeting more effective advertising. Through data analysis and

machine learning algorithms, AI can identify the right target segments and tailor ads to individual consumer interests and preferences. It helps companies allocate advertising budgets efficiently and better results in their marketing campaigns (Mandapuram et al, 2020).

With the help of AI, companies can better predict and analyze consumer behavior. AI can identify patterns, trends, and consumer preferences based on historical data. This information can be used to optimize marketing strategies, anticipate consumer needs, and develop more effective campaigns.

AI also plays an important role in optimizing social media marketing strategies. Using AI technology, companies can analyze data from social media platforms to understand consumer trends, preferences, and behaviour. AI can help in identifying the best time to post, optimizing the most interesting content, and managing social media advertising campaigns more effectively. By using AI algorithms, companies can analyze product reviews, feedback, and social media posts to understand consumer opinions about a particular brand or product. This information can be used to improve product quality, improve customer experience, and respond to problems quickly. Sentiment analysis also helps in understanding market trends and evolving consumer needs (Mathur et al, 2022).

In a growing world of marketing, AI has opened up new opportunities and enabled companies to reach consumers more intelligently and effectively. From data analysis to content personalization, AI plays a key role in optimizing marketing strategies, increasing customer engagement, and achieving better results. By adopting AI technology in marketing, companies can gain deeper insights into consumers, optimize customer experiences, and strengthen brand relationships. It is important for companies to keep up with AI technology developments and integrate them into their marketing strategies to remain competitive and successful in the ever-changing digital age.

AI-Supported Customer Segmentation

With the help of AI, customer segmentation becomes smarter and more detailed. The system can automatically identify groups of customers that have similar characteristics, allowing companies to better tailor marketing and service strategies for each segment. AI is also used in analyzing sentiment from customer feedback. Through natural language analysis, companies can understand customer feelings about products or services, and respond quickly to input and criticism (Hicham et al, 2023).

AI systems can be proactive in anticipating customer needs. For example, by analyzing purchasing patterns and preferences, companies can offer appropriate product or service recommendations before customers do so. In leveraging big data for customer relationship management, security and ethics in the use of customer data is becoming crucial. The company must ensure that customer data is properly protected and used in accordance with applicable privacy policies (Mishra & Triptahi, 2019).

Despite many advantages, integrating AI into CRM also faces several challenges, including expanding technology infrastructure, training staff, and building customer confidence in the use of this technology. However, the future shows that AI will continue to take a larger role in shaping the future of customer relationship management (Wisetsri et al, 2022).

AI plays a significant role in improving and improving market segmentation processes. Using AI technology, companies can better understand consumer behaviour and identify groups with similar characteristics. Some key aspects of the role of AI in market segmentation include:

1. Larger and diversified data sets Data is key to effective market segmenting. The more data available, the better companies can understand their consumers. AI allows companies to collect, store, and analyze larger and diverse data sets from a variety of sources, including social media, websites, and customer transactions. This allows companies to gain a deeper insight into consumer behavior, market trends, and other factors that influence purchasing decisions.
2. More complex data analysis With high computing, AI can perform more complex data analytics. This includes the processing of patterns that are difficult to identify by humans, enabling companies to identificate deeper relationships and correlations between various variables in market segmentation.
3. Customer AI profiling enables more accurate and comprehensive customer profile creation. Using data from various sources, AI can identify the preferences, habits, and unique characteristics of each customer, helping companies to better understand their needs and wishes. 4. Customer journey mapping Through in-depth data analysis, AI may help companies to create more detailed customer travel maps. It helps in understanding how customers interact with brands from beginning to end, enabling companies to improve customer experience and maximize customer value (Chintalapati & Pandey, 2022).

Predictive analytics

Given the massive development of digital technology as it is today, services that pay attention to consumer experiences become a unique and important differentiating factor for business owners. As interaction increases through different channels, consumers are increasingly focused on satisfaction that can be easily accessed through various channals (Hu, 2022). To meet growing consumer expectations, the company's strategy in increasing customer satisfaction in the digital world is to implement and integrate AI. By leveraging the power of AI, companies can analyze consumer data to obtain information about individual preferences, behaviors, and needs, so that they can offer relevant solutions.

Businesses can use machine learning algorithms to target customers with product ideas and promotions via a range of channels, such as social media platforms, mobile apps, websites, and online storefronts. Moreover, chatbots and AI-powered virtual assistants are crucial in leveraging machine learning and natural language processing methods to comprehend and promptly address client inquiries. (Haleem et al, 2022).

CONCLUSION

Digital marketing has undergone a rapid evolution in recent years. One of the biggest changes that changed the marketing landscape was the emergence of artificial intelligence (AI) and machine learning. (machine learning). This technology has revolutionized the way companies interact with customers and optimize their marketing efforts. Artificial intelligence refers to the ability of computers or systems to mimic human intelligence. In the context of digital marketing, AI can be used to analyze data quickly and efficiently, identify patterns, and provide valuable insights. With artificial intelligence, companies can make smarter decisions and optimize their marketing campaigns based on thoroughly analyzed data.

The main advantages offered by artificial intelligence and machine learning in digital marketing are the ability to automate processes and improve personalization. The digital marketing revolution caused by the emergence of artificial intelligence and machine learning provides great opportunities for companies to improve the effectiveness of their campaigns, optimize the customer experience, and better results. However, companies also need to consider the ethical and privacy implications associated with the use of customer data. By using this technology wisely and complying with applicable

regulations, companies can harness the full potential of the digital marketing revolution triggered by artificial intelligence and machine learning.

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